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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/741,532	12/19/2000	Venkatesan Murali	42390P10305	6371

7590

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EXAMINER

CHEN, KIN CHAN

ART UNIT

PAPER NUMBER

1765

DATE MAILED: 04/01/2003

14

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/741,532

Applicant(s)

MURALI, VENKATESAN

Examiner

Kin-Chan Chen

Art Unit

1765

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 February 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4 and 16-25 is/are pending in the application.
- 4a) Of the above claim(s) 23-25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 16-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Kosemura (US 6,330,377).

Kosemura teaches a method for making an optical transmitting and receiving system having a through hole formed in the substrate (so-called making a photonic via in the claimed invention). Kosemura teaches a through hole, extending from one side of the substrate through the substrate to an opposite side of the substrate. A cladding material may be deposited into the hole. An optical core material may be deposited into the hole (col. 11, lines 20-30).

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 16, 20, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kosemura (US 6,330,377) in view of Nakamura et al. (US 5,604,835; hereinafter "Nakamura").

Kosemura teaches a method for making an optical transmitting and receiving system having a through hole formed in the substrate (so-called making a photonic via in the claimed invention). Kosemura teaches a through hole, extending from one side of the substrate through the substrate to an opposite side of the substrate. A cladding material may be deposited into the hole. An optical core material (polymer) may be deposited into the hole (col. 11, lines 20-30).

Kosemura does not disclose using a conventional etching method for making a hole and cladding material may be an oxide material. In a method for making an optical device, Nakamura teaches etching a hole in a substrate (col. 6, lines 2-3). Nakamura teaches etching a hole in a silicon substrate (col. 6, lines 2-3). An oxide material may be deposited into the hole. (Fig.1; col. 5, lines 9-12). A first polymer may be deposited into the hole (col. 9, lines 57-62). Because they are conventional method and materials in the art of the optical device fabrication and because they are disclosed by Nakamura,

hence, it would have been obvious to one with ordinary skill in the art to etch a hole and using oxide cladding material in method of Kosemura in order to effectively fabricate the optical device.

4. Claims 2, 4, 17 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kosemura (US 6,330,377) in view of Nakamura et al. (US 5,604,835 ; hereinafter "Nakamura " ) and Kenney et al. (US 6,311,004 B1; hereinafter "Kenney" ).

Kosemura teaches a method for making an optical transmitting and receiving system having a through hole formed in the substrate (so-called making a photonic via in the claimed invention). Kosemura teaches a through hole, extending from one side of the substrate through the substrate to an opposite side of the substrate. A cladding material may be deposited into the hole. An optical core material (polymer) may be deposited into the hole (col. 11, lines 20-30).

Kosemura does not disclose using a conventional etching method for making a hole and cladding material may be an oxide material. In a method for making an optical device, Nakamura teaches etching a hole in a substrate (col. 6, lines 2-3). Nakamura teaches etching a hole in a silicon substrate (col. 6, lines 2-3). An oxide material may be deposited into the hole. (Fig.1; col. 5, lines 9-12). A first polymer may be deposited into the hole (col. 9, lines 57-62). Because they conventional method and materials in the art of the optical device fabrication and because they are disclosed by Nakamura, hence, it would have been obvious to one with ordinary skill in the art to etch a hole and using oxide cladding material in method of Kosemura in order to effectively fabricate the optical device.

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As to dependent claims 2 and 17, Kosemura and Nakamura do not teach that a lens may be formed on top of the optical core material. However, it is a well-known feature in the art of optical system and is a choice of design depending on the product requirement. Kenny is relied on only to show this well-known feature. Kenny teaches that the silica cladding material and polymer may be placed between lenses (col. 17, lines 8-10). Hence, it would have been obvious to one with ordinary skill in the art to modify Kosemura and Nakamura by adding the lens on the optical core material (such as polymer) as taught by Kenny in order to provide their art recognized advantages and meet the specific product requirement.

As to dependent claims 4 and 19, Kosemura and Nakamura do not teach the method comprising polishing the substrate. However, it is a conventional process step in the art of electro-optic system fabrication to planarize the surface. Kenny is relied on only to show this conventional process step. Kenny teaches that the planarization (so-called polishing in the instant claims) may be used in the process, see col. 9, line 62. Hence, it would have been obvious to one with ordinary skill in the art to modify Kosemura and Nakamura by using this conventional process step as taught by Kenny in order to provide their art recognized advantages and produce an expected result.

5. Claims 3, 18, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kosemura, Nakamura, and Kenney as applied to claims 2, 4, 17 and 19 above, and further in view of Lipscomb et al. (US 4,879,318 ; hereinafter "Lipscomb" ).

As to dependent claims 3, 18, and 22, the combined prior art of Kosemura, Nakamura and Kenny do not teach the method of forming a lens by depositing a polymer (or second polymer in claim 22) and curing the polymer (or second polymer in claim 22). However, it is conventional steps for forming a lens in the art of optics system. In the method of forming the optical lenses, Lipscomb teaches that the optical lenses may be formed by depositing a polymer and curing the polymer (col. 1, lines 18-20; col. 6, lines 10-15). Hence, it would have been obvious to one with ordinary skill in the art to modify Kosemura, Nakamura and Kenny by using the said conventional steps for forming a lens as taught by Lipscomb in order to provide their art recognized advantages and produce an expected result.

### ***Response to Arguments***

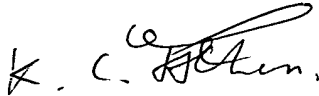
6. Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kin-Chan Chen whose telephone number is (703) 305-0222. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Benjamin Utech can be reached on (703) 308-3836. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final

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communications. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-2934.

K-C C  
March 26, 2003

  
Patent Examiner  
Group Art Unit 1765